

We claim:

1. A multicoat system on a substrate, comprising at least one
5 radiation-curable coating system (F) and at least one elastic intercoat (D) which is located between substrate and radiation-curable coating system (F) and has a glass transition temperature (T_g) of -20°C or less (measured in the frequency range up to 1000 Hz).
- 10 2. A multicoat system as claimed in claim 1, composed of
(F) at least one radiation-curable coating system,
15 (E) if desired, at least one coat which is pigmented and/or provided with effect substances,
(D) at least one elastic intercoat (D) having a glass transition temperature (T_g) of -20°C or less,
20 (C) if desired, at least one coat selected from the group consisting of primer, basecoat, undercoat, coat pigmented or provided with effect substances, and substrate 2,
25 (B) if desired, at least one elastic intercoat, if coat (C) is a substrate 2, and
(A) substrate 1.
- 30 3. A multicoat system as claimed in claim 1 or 2, wherein the substrates 1 and/or 2 in the coats (A) and/or (C) are selected from the group consisting of paper, plastics, and metals.
- 35 4. A multicoat system as claimed in claim 1 or 2, wherein the substrates are selected from the group consisting of PP (polypropylene), SAN (styrene-acrylonitrile copolymers), PC, PMMA, PBT, PA, ASA (acrylonitrile-styrene-acrylate copolymers) and ABS (acrylonitrile-butadiene-styrene-
40 copolymers) and also their physical mixtures (blends).
5. A multicoat system as claimed in any of the above claims, wherein the thickness of the elastic intercoat (D) is from 0.5 to 500 μm .

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6. A multicoat system as claimed in any of the above claims, wherein at least one compound in the elastic intercoat (D) is selected from the group consisting of thermoplastic elastomers, polyacrylates, and poly-*iso*-butenes.
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7. A multicoat system as claimed in claim 6, wherein at least one compound in the elastic intercoat (D) is selected from the group consisting of styrene-butadiene-styrene (SBS), styrene-isoprene-styrene (SIS), styrene-ethylene/butylene-
- 10 styrene (SEBS) and styrene-ethylene/propylene-styrene (SEPS) block polymers.
8. A substrate coated with a multicoat system as claimed in any of the above claims.
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9. A method of coating a substrate with at least one radiation-curable coating system (F), which comprises applying, between the substrate and said at least one radiation-curable coating system (F), an elastic intercoat
- 20 (D) having a glass transition temperature (T_g) of -20°C or less.
10. The use of a multicoat system as claimed in any of claims 1 to 7 for the coating of buildings or parts of buildings,
- 25 interior coatings or coatings on vehicles and aircraft.

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